

## COMMENTARY

Digital Analysis of Anterior Dental Esthetic Parameters in Patients with Bilateral Maxillary Lateral Incisor Agenesis<sup>1</sup>

VISHNU RAJ, BDS, MSFS, MS\*

Missing maxillary lateral incisors detract significantly from the esthetics of a smile and present a unique set of restorative challenges. The absence of maxillary lateral incisors is usually addressed in one of two ways—orthodontic repositioning of the canines and recontouring (canine substitution), or prosthodontic replacement of the lateral incisor with an implant-supported restoration or a fixed partial denture. Several authors have debated the pros and cons of either approach<sup>2,3</sup>; however, the literature has been relatively sparse with regard to the effect of these two protocols on anterior dental esthetics.

The authors of the article titled, “Digital Analysis of Anterior Dental Esthetic Parameters in Patients with Bilateral Maxillary Incisor Agenesis” attempt to evaluate anterior dental esthetics in patients with the bilateral absence of maxillary lateral incisors.<sup>1</sup> These patients were treated either with canine substitution (and recontouring), or with implant-supported restorations replacing the missing maxillary lateral incisors. A group of untreated subjects with intact maxillary lateral incisors served as a control group. Scanned and digitized dental casts were used to measure the width/height ratio, gingival zenith (GZ), and the apparent contact dimension (ACD) of the maxillary anterior teeth.

The authors found that the GZ for the substituted lateral incisors in the canine substitution group was more apical than in the other two groups. This is a commonly observed error during orthodontic finishing in cases of canine substitution.<sup>2</sup> In addition to recontouring, it is necessary to orthodontically extrude the maxillary canine and intrude the premolar in order to establish the naturally appearing high-low-high marginal gingival contours of the maxillary anterior teeth.<sup>2</sup> Another finding of interest in this study was the increased ACD proportions evident in the implant group relative to the other two groups. This represents an elongated and more apical proximal contact area, which is usually seen as a consequence of attempting to compensate for incomplete gingival papillary fill around implant crowns.<sup>2,4</sup> An interproximal area dominated by tooth contact (as reflected by the increased ACD) may not be as esthetic as one where tooth contact and papilla exhibit more equitable proportions.

As the use of implant-supported restorations in the anterior maxilla gains increasing popularity, it is imperative to evaluate the esthetics of these restorations relative to natural teeth. This commendable study is the first of its kind comparing the esthetics of canine substitution versus implant-supported restorations in the replacement of missing maxillary lateral incisors. However, any comprehensive evaluation of anterior dental esthetics has to include an analysis of the smile. An interesting topic for future research could be the evaluation of smile esthetics in patients treated with canine substitution versus implant-supported restorations.

## REFERENCES

1. Pini NP, De-Marchi LM, Gribel BF, Pascotto RC. Digital analysis of anterior dental esthetic parameters in patients with bilateral maxillary lateral incisor agenesis. *J Esthet Restor Dent* DOI 10.1111/jerd.12014.

\*Private practice, 127 E. Riverside Drive, Austin, TX 78704, USA

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2. Zachrisson BU, Rosa M, Toreskog S. Congenitally missing maxillary lateral incisors: canine substitution. *Point. Am J Orthod Dentofacial Orthop* 2011;139(4):434. 436, 438 passim.
3. Kokich VO Jr, Kinzer GA, Janakievski J. Congenitally missing maxillary lateral incisors: restorative replacement. *Counterpoint. Am J Orthod Dentofacial Orthop* 2011;139(4):435. 437, 439 passim.
4. Phillips K, Kois JC. Aesthetic peri-implant site development. The restorative connection (Review). *Dent Clin North Am* 1998;42(1):57–70.

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